UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/724,181	11/28/2000	Robert Edward Meredith Swann	R&G C-312	7754

7590 04/23/2004

FLYNN, THIEL, BOUTELL & TANIS, P.C.
2026 Rambling Road
Kalamazoo, MI 49008-1699

EXAMINER	
BLACKMAN, ANTHONY J	
ART UNIT	**PAPER NUMBER**
2676	10

DATE MAILED: 04/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/724,181	Applicant(s) SWANN ET AL.
	Examiner ANTHONY J BLACKMAN	Art Unit 2676

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 January 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,9 and 17-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,9 and 17-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/22/04*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Examiner appreciates applicant pointing out the correction of the country code for the European Patent Application, 0618545A2.

Examiner withdraws use of NICHANI , US Patent No. 6,259,827 anticipating claims 1 and 9. DESAI et al, US Patent No. 6,072,904 is interpreted to anticipate claims 1, 9, 17-18 and 25-26. Previously cited ANCIN et al, US Patent No. 6,038,340 provides support for the remaining claims 19-24 and 27-34.

Claim Objections

2. Claim 32 is objected to because of the following informalities: claim 32 is dependent upon itself, claim 32, rather than claim 1. Appropriate correction is required. Examiner will interpret claim 32 as best understood.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 9 and 17-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over DESAI et al, US Patent No. 6,072,904 in view of ANCIN et al, US Patent No. 6,038,340.

5. As per claim 1, examiner interprets DESAI et al to disclose An image processing system for producing clusters of related objects within as an image (column 2, lines 22-25)for subsequent analysis (column 2, lines 32-38)said system including:
means for supplying a multi-level digital representation of an image (column 2, lines 39-47, figure 5, element 350); means for deriving boundary data from the multi-level digital representation of the image (figure 3, elements 222 and 224), the boundary data representing boundaries between regions of the image (figure 3, element 226) having different characteristics (figure 3, element 240); and means for supplying data relating to the groups of objects for subsequent analysis (figure 3, the repetitive loop of elements 370 –379 and 399), however, does not expressly teach means for clustering the predetermined objects into groups of related objects as a function of the proximity of the objects to each other and as a function of the boundary data; identifying predetermined objects in the image from the multi-level digital representation of the image and supplying data defining the locations of the objects. ANCIN et al suggest means for clustering the predetermined objects into groups of related objects as a function of the proximity of the objects to each other and as a function of the boundary data identifying predetermined objects in the image from the multi-level digital representation of the image and supplying data defining the locations of the objects (column 1, line 55-column 2, line 25 and column 3, lines 14-21).

It would have been obvious to one skilled in the art at the time of the invention to utilize ANCIN et al's pixel clustering algorithm (column 5, lines 10-21) comprising a predetermined distance means using relatively black pixels and relatively white pixels differentiating regions in an image (column 1, lines 55-66 and column 5, lines 39-52) to modify DESAI et al's multiscale edge representations comprising images grouped into clusters (column 2, lines 22-38) because both inventions are drawn to clustering portions of multi-scales/level images using distance as a factor to determine the cluster processing. The addition of ANCIN et al's pixel cluster algorithm method provides cluster processing of black and white pixels "...detecting image black and white points for a digital image (column 2, lines 26-38)" and the RGB distance means (column 5, lines 39-52). Therefore, the pixel clustering teaching of ANCIN et al improves the multi-scale target detection with improved black , white and RGB differentiation of clustered groupings.

6. As per claim 9, examiner interprets DESAI et al to disclose A method for processing images for producing clusters of related objects within an image (column 2, lines 22-25) for subsequent analysis(column 2, lines 32-38) , said method includinq the steps of; supplying a multi-level digital representation of an image(column 2, lines 39-47, figure 5, element 350); deriving boundary data from the multi-level digital representation of the image(figure 3, elements 222 and 224), the boundary data representing boundaries between regions of the original image having different characteristics (figure 3, element 226); however, does not expressly teach means for

identifying predetermined objects in the image and supplying data defining the locations of the predetermined objects based on the multi-level digital representation of the image and clustering the predetermined objects into groups of related objects as a function of the proximity of the objects to each other and a function of the boundary data . ANCIN et al suggest means for identifying predetermined objects in the image (column 1, line 55-column 2, line 25 and column 3, lines 14-21) and supplying data defining the locations of the predetermined objects based on the multi-level digital representation of the image (column 1, line 55-column 2, line 25 and column 3, lines 14-21) and clustering the predetermined objects into groups of related objects as a function of the proximity of the objects to each other (column 1, line 55-column 2, line 10 and column 5, lines 39-52); and a function of the boundary data)column 5, lines 39-52). It would have been obvious to one skilled in the art at the time of the invention to utilize ANCIN et al's pixel clustering algorithm (column 5, lines 10-21) comprising a predetermined distance means using relatively black pixels and relatively white pixels differentiating regions in an image (column 1, lines 55-66 and column 5, lines 39-52) to modify DESAI et al's multiscale edge representations comprising images grouped into clusters (column 2, lines 22-38) because both inventions are drawn to clustering portions of multi-scales/level images using distance as a factor to determine the cluster processing. The addition of ANCIN et al's pixel cluster algorithm method provides cluster processing of black and white pixels "...detecting image black and white points for a digital image (column 2, lines 26-38)" and the RGB distance means (column 5, lines 39-52). Therefore, the pixel clustering teaching of ANCIN et al improves the multi-

scale target detection with improved black , white and RGB differentiation of clustered groupings.

7. As per claims 17 and 25, DESAI et al as modified by ANCIN et al meet limitations of claims 1 and 9, DESAI et al does not expressly teach limitations of claim 17. ANCIN et al suggest, wherein said means for deriving boundary data derives boundary data based on a representation of the image that is different from the representation of the image (column 2, lines 22-38 and 59-65), however, does not expressly teach wherein said means for deriving boundary data derives boundary data based on a representation of the image that is different from the representation of the image from which said means for identifying predetermined objects identifies objects and defines the locations of objects in the image. ANCIN et al suggest wherein said means for deriving boundary data derives boundary data based on a representation of the image that is different from the representation of the image from which said means for identifying predetermined objects identifies objects and defines the locations of objects in the image (column 1, line 55-column 2, line 10 and column 5, lines 39-52).

It would have been obvious to one skilled in the art at the time of the invention to utilize ANCIN et al's pixel clustering algorithm (column 5, lines 10-21) comprising a predetermined distance means using relatively black pixels and relatively white pixels differentiating regions in an image (column 1, lines 55-66 and column 5, lines 39-52) to modify DESAI et al's multiscale edge representations comprising images grouped into clusters (column 2, lines 22-38) because both inventions are drawn to clustering

portions of multi-scales/level images using distance as a factor to determine the cluster processing. The addition of ANCIN et al's pixel cluster algorithm method provides cluster processing of black and white pixels "...detecting image black and white points for a digital image (column 2, lines 26-38)" and the RGB distance means (column 5, lines 39-52). Therefore, the pixel clustering teaching of ANCIN et al improves the multi-scale target detection with improved black, white and RGB differentiation of clustered groupings.

8. As per claims 18 and 26, DESAI et al meet limitations of claims 1 and 9, DESAI et al does not expressly teach limitations of claim 18. DESAI et al suggest, wherein said means for deriving boundary data derives boundary data from a source of data containing data representing the image input image device (column 2, lines 22-38 and 59-65)that is different from the source of data containing data representing the image (column 2, lines 22-38 and 59-65), however, does not expressly teach from which said means for identifying predetermined objects identifies objects and defines the locations of objects in the image. ANCIN et al suggest means for identifying predetermined objects identifies objects and defines the locations of objects in the image (column 1, line 55-column 2, line 10 and column 5, lines 39-52).

It would have been obvious to one skilled in the art at the time of the invention to utilize ANCIN et al's pixel clustering algorithm (column 5, lines 10-21) comprising a predetermined distance means using relatively black pixels and relatively white pixels differentiating regions in an image (column 1, lines 55-66 and column 5, lines 39-52) to

modify DESAI et al's multiscale edge representations comprising images grouped into clusters (column 2, lines 22-38) because both inventions are drawn to clustering portions of multi-scales/level images using distance as a factor to determine the cluster processing. The addition of ANCIN et al's pixel cluster algorithm method provides cluster processing of black and white pixels "...detecting image black and white points for a digital image (column 2, lines 26-38)" and the RGB distance means (column 5, lines 39-52). Therefore, the pixel clustering teaching of ANCIN et al improves the multi-scale target detection with improved black , white and RGB differentiation of clustered groupings.

9. As per claims 19 and 27, DESAI et al meet limitations of claims 1 and 9, including, wherein said means for supplying the multi-level/multi-scale digital representation of the image generates background data representative of the background of the image (column 2, lines 39-47); and said means for identifying boundary data derives boundary data from the background data generated by said means (figure 3, elements 222 and 224) for generating the multi-level digital representation of the image .

It would have been obvious to one skilled in the art at the time of the invention to utilize ANCIN et al's pixel clustering algorithm (column 5, lines 10-21) comprising a predetermined distance means using relatively black pixels and relatively white pixels differentiating regions in an image (column 1, lines 55-66 and column 5, lines 39-52) to modify DESAI et al's multiscale edge representations comprising images grouped into clusters (column 2, lines 22-38) because both inventions are drawn to clustering

portions of multi-scales/level images using distance as a factor to determine the cluster processing. The addition of ANCIN et al's pixel cluster algorithm method provides cluster processing of black and white pixels "...detecting image black and white points for a digital image (column 2, lines 26-38)" and the RGB distance means (column 5, lines 39-52). Therefore, the pixel clustering teaching of ANCIN et al improves the multi-scale target detection with improved black , white and RGB differentiation of clustered groupings.

10. As per claims 20 and 28, DESAI et al as modified by ANCIN et al meet limitations of claims 19 and 27. DESAI et al suggest, wherein said means for identifying boundary data is configured to derive boundary data (figure 3, elements 222 and 224), however, does not expressly teach wherein said means for identifying boundary data is configured to derive boundary data from background data that are color data. ANCIN et al suggest wherein said means for identifying boundary data is configured to derive boundary data from background data that are color data (column 1, line 55-column 2, line 25). It would have been obvious to one skilled in the art at the time of the invention to utilize ANCIN et al's pixel clustering algorithm (column 5, lines 10-21) comprising a predetermined distance means using relatively black pixels and relatively white pixels differentiating regions in an image (column 1, lines 55-66 and column 5, lines 39-52) to modify DESAI et al's multiscale edge representations comprising images grouped into clusters (column 2, lines 22-38) because both inventions are drawn to clustering portions of multi-scales/level images using distance as a factor to determine the cluster processing. The addition of ANCIN et al's pixel cluster algorithm method provides

cluster processing of black and white pixels "...detecting image black and white points for a digital image (column 2, lines 26-38)" and the RGB distance means (column 5, lines 39-52). Therefore, the pixel clustering teaching of ANCIN et al improves the multi-scale target detection with improved black , white and RGB differentiation of clustered groupings.

11. As per claims 21 and 29, DESAI et al as modified by ANCIN et al meet limitations of claims 19 and 27, however, do not expressly teach limitations of claim 20 and 28. ANCIN et al suggest, wherein said means for identifying boundary data is configured to derive boundary data from background data that are greyscale data (figures 4 and 8). It would have been obvious to one skilled in the art at the time of the invention to utilize ANCIN et al's pixel clustering algorithm (column 5, lines 10-21) comprising a predetermined distance means using relatively black pixels and relatively white pixels differentiating regions in an image (column 1, lines 55-66 and column 5, lines 39-52) to modify DESAI et al's multiscale edge representations comprising images grouped into clusters (column 2, lines 22-38) because both inventions are drawn to clustering portions of multi-scales/level images using distance as a factor to determine the cluster processing. The addition of ANCIN et al's pixel cluster algorithm method provides cluster processing of black and white pixels "...detecting image black and white points for a digital image (column 2, lines 26-38)" and the RGB distance means (column 5, lines 39-52). Therefore, the pixel clustering teaching of ANCIN et al improves the multi-scale target detection with improved black , white and RGB differentiation of clustered groupings.

12. As per claims 22 and 30, DESAI et al as modified by ANCIN et al meet limitations of claims 1 and 9, however, do not expressly teach limitations of claim 22 and 30. ANCIN et al suggest, wherein said means for clustering objects clusters objects together that are separated by less than a predetermined distance (column 5, lines 39-52).

It would have been obvious to one skilled in the art at the time of the invention to utilize ANCIN et al's pixel clustering algorithm (column 5, lines 10-21) comprising a predetermined distance means using relatively black pixels and relatively white pixels differentiating regions in an image (column 1, lines 55-66 and column 5, lines 39-52) to modify DESAI et al's multiscale edge representations comprising images grouped into clusters (column 2, lines 22-38) because both inventions are drawn to clustering portions of multi-scales/level images using distance as a factor to determine the cluster processing. The addition of ANCIN et al's pixel cluster algorithm method provides cluster processing of black and white pixels "...detecting image black and white points for a digital image (column 2, lines 26-38)" and the RGB distance means (column 5, lines 39-52). Therefore, the pixel clustering teaching of ANCIN et al improves the multi-scale target detection with improved black , white and RGB differentiation of clustered groupings.

13. As per claims 23 and 31, DESAI et al ANCIN et al meet limitations of claims 1 and 9, however, do not expressly teach limitations of claim 23 and 31. ANCIN et al suggest, wherein said means for clustering objects clusters objects together that are

separated by less than a predetermined distance and that are not separated by a boundary defined by the boundary data (column 5, lines 39-52) .

It would have been obvious to one skilled in the art at the time of the invention to utilize ANCIN et al's pixel clustering algorithm (column 5, lines 10-21) comprising a predetermined distance means using relatively black pixels and relatively white pixels differentiating regions in an image (column 1, lines 55-66 and column 5, lines 39-52) to modify DESAI et al's multiscale edge representations comprising images grouped into clusters (column 2, lines 22-38) because both inventions are drawn to clustering portions of multi-scales/level images using distance as a factor to determine the cluster processing. The addition of ANCIN et al's pixel cluster algorithm method provides cluster processing of black and white pixels "...detecting image black and white points for a digital image (column 2, lines 26-38)" and the RGB distance means (column 5, lines 39-52). Therefore, the pixel clustering teaching of ANCIN et al improves the multi-scale target detection with improved black , white and RGB differentiation of clustered groupings.

14. As per claims 24 and 33, DESAI et al meet limitations of claims 1 and 9, however, does not expressly teach limitations of claims 24 and 33. ANCIN et al suggest, wherein said means for clustering objects clusters objects together that are not separated by a boundary defined by the boundary data (column 5, lines 39-52).

It would have been obvious to one skilled in the art at the time of the invention to utilize ANCIN et al's pixel clustering algorithm (column 5, lines 10-21) comprising a predetermined distance means using relatively black pixels and relatively white pixels

differentiating regions in an image (column 1, lines 55-66 and column 5, lines 39-52) to modify DESAI et al's multiscale edge representations comprising images grouped into clusters (column 2, lines 22-38) because both inventions are drawn to clustering portions of multi-scales/level images using distance as a factor to determine the cluster processing. The addition of ANCIN et al's pixel cluster algorithm method provides cluster processing of black and white pixels "...detecting image black and white points for a digital image (column 2, lines 26-38)" and the RGB distance means (column 5, lines 39-52). Therefore, the pixel clustering teaching of ANCIN et al improves the multi-scale target detection with improved black , white and RGB differentiation of clustered groupings.

15. As per claims 32 and 34, DESAI et al meet limitations of claims 1 and 9, however, does not expressly teach limitations of claims 32 and 34. DESAI et al suggest wherein, in said step of supplying a multi-level digital representation of the image (column 2, lines 39-47 and 59-63). It would have been obvious to one skilled in the art at the time of the invention that the input means, i.e., scanner or camera, could be utilized to capture an image of a piece of mail.

It would have been obvious to one skilled in the art at the time of the invention to utilize ANCIN et al's pixel clustering algorithm (column 5, lines 10-21) comprising a predetermined distance means using relatively black pixels and relatively white pixels differentiating regions in an image (column 1, lines 55-66 and column 5, lines 39-52) to modify DESAI et al's multiscale edge representations comprising images grouped into clusters (column 2, lines 22-38) because both inventions are drawn to clustering

portions of multi-scales/level images using distance as a factor to determine the cluster processing. The addition of ANCIN et al's pixel cluster algorithm method provides cluster processing of black and white pixels "...detecting image black and white points for a digital image (column 2, lines 26-38)" and the RGB distance means (column 5, lines 39-52). Therefore, the pixel clustering teaching of ANCIN et al improves the multi-scale target detection with improved black, white and RGB differentiation of clustered groupings.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. HSU, US Patent No. 6,151,424 discloses identification of objects image features using multi-level resolution and segmentation processing. LIOU et al, US Patent No. 6,278,446 discloses comprising edge and distance processing (column 10). UCHIHACHI et al, US Patent No. 6,535,639 disclose cluster and segmentation processing comparing a set distance between frames of video.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY J BLACKMAN whose telephone number is 703-305-0833. The examiner can normally be reached on an eight hour per day FLEX SCHEDULE.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MATTHEW BELLA can be reached on 703-308-6829. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ANTHONY J BLACKMAN
Examiner
Art Unit 2676

***

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600